

A System for Monitoring Persons in Isolation and Quarantine

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Minnesota Department of Health**

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QUARANTINE

CONTAGIOUS DISEASE

NO ONE SHALL ENTER OR LEAVE THIS HOUSE WITHOUT WRITTEN PERMISSION OF THE LOCAL HEALTH AUTHORITY. (Art. 4477 - V.A.C.S.)

NO PERSON EXCEPT AN AUTHORIZED EMPLOYEE OF THE HEALTH DISTRICT SHALL ALTER, DESTROY OR REMOVE THIS CARD. (Art. 4477 - V.A.C.S.)

ANYONE VIOLATING THIS REGULATION WILL BE FINED NOT LESS THAN \$10.00 NOR MORE THAN \$1,000.00 FOR EACH VIOLATION. (ART. 770 Texas-Penal Code)

BY ORDER OF

DIRECTOR OF HEALTH

SAN ANTONIO METROPOLITAN HEALTH DISTRICT

Definitions of Isolation and Quarantine (I/Q)

- Isolation

- Separation and restriction of movement and activities of ill persons with a contagious disease for the purpose of preventing disease transmission

- Quarantine

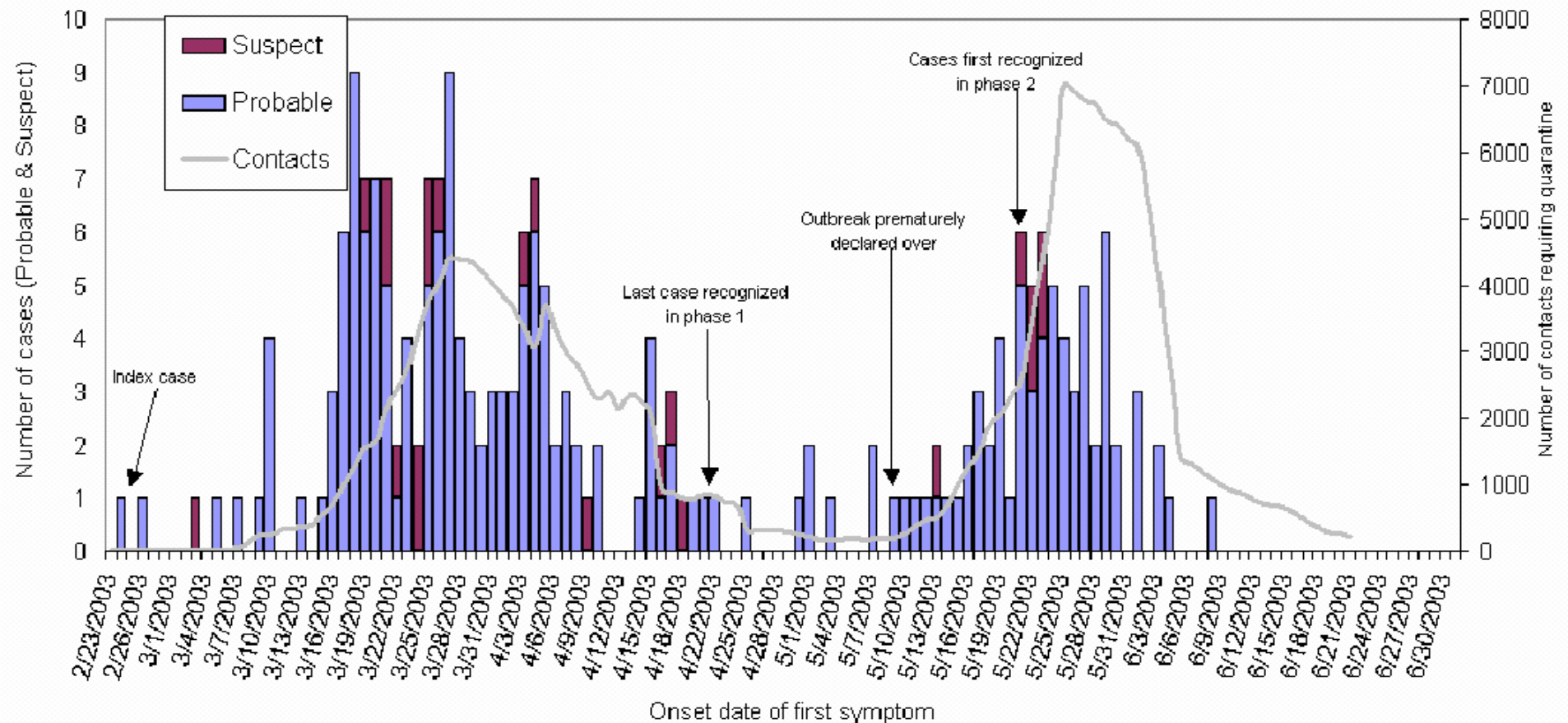
- Separation and restriction of movement and activities of persons who are not ill but are believed to have been exposed to infection for the purpose of preventing disease transmission

I/Q Re-emergence as a Disease Control Strategy

- **Bioterrorism concerns revitalized interest in I/Q**
 - **CDC sponsored draft of Model State Emergency Health Powers Act**
 - **In 2002 Minnesota Legislature updated old I/Q laws as part of the Emergency Health Powers Act**
- **In response to Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 several countries (Canada, Hong Kong, Singapore, and China) extensively used modern I/Q**

Number of Probable SARS Cases in Canada by Symptom Onset Date and Number of Persons in Quarantine February 23 to June 30, 2003 (N=249), excludes 1 case for whom onset date is unknown

Figure 1: Toronto SARS Cases* Contacts Requiring Quarantine†



Quarantine for SARS, Ontario, 2003

- **23,297 contacts followed up**
- **Up to 7,000 persons in quarantine at any time**
- **Monitoring conducted through phone calls;
2 calls per day**
- **Monitoring documented using a paper system**

Purpose of Monitoring Persons in I/Q

- **Monitor the health status of persons in I/Q**
- **Ensure that persons in I/Q are compliant with restrictions**
- **Ensure that persons in I/Q have basic needs met (e.g., food, clothing, housing, medical needs, etc.)**
- **Ensure that persons in I/Q have appropriate infection control supplies**

I/Q Monitoring System: Need

- **In September 2003, the Minnesota Department of Health (MDH) determined that a computerized monitoring system would be critical for managing large-scale I/Q**
- **Disease reporting is centralized in Minnesota but follow-up may occur at either the state or local level; the system must coordinate monitoring and assurance of essential services activities between state and local public health**

I/Q Monitoring System: Goals

- **Develop a system for monitoring persons in I/Q. Case follow-up and contact tracing conducted through other applications**
- **Flexibility**
 - built on assumptions (e.g., number of days in I/Q may vary)
 - allow processing parameters to be updated as more information is gained
- **Accommodate different diseases where I/Q may be implemented (e.g., smallpox)**
- **Create automated reports**

I/Q Monitoring System: Goals (cont.)

- **Accommodate different levels of monitoring:**
 - isolation
 - quarantine
 - monitoring without I/Q (e.g., person is monitored for symptom development but not placed in quarantine)
- **Documentation for each person**
 - communication with the individual
 - compliance with I/Q
 - essential service needs
 - health status
 - legal orders

Outline of Monitoring

- **Persons would be contacted twice daily; 3 phone attempts would be made**
- **If all 3 phone attempts fail, local public health will conduct a home check**
- **The following information needs would be collected during monitoring calls:**
 - **Temperature**
 - **New or worsening symptoms consistent with SARS**
 - **Symptomatic household contacts**
 - **Essential services needed**

Monitoring Follow-up

- **If 3 phone attempts and home check fail the Medical/Legal Management Team will determine next steps**
- **If a person being monitored reports new or worsening symptoms, the Clinical Team will review to determine appropriate follow-up**
- **If services are needed and the monitored person is unable to obtain them, the request will be referred to local public health**

Primary Assumptions

- Limited number of MDH staff would be responsible for data entry and data management
- Other MDH staff would view information on a specific person, but would not need to learn entire system
- System must provide information to and accept data from local public health agencies, since they would fulfill essential services and conduct some monitoring calls
- Monitoring calls could be documented on paper and then data entered into the application

Development Process

- **Team created with a combination of Acute Disease Investigation and Control (ADIC) and Information Systems Unit (ISU) staff**
 - 11 ISU staff and 3 ADIC staff
- **Project management disciplines were applied in concert with a system development methodology**
- **Timeline: Initiated October 2003 with a goal of an operational system by December 2003**

Development Process (cont.)

- **System was developed, tested and implemented in a staged approach**
 - **Release 1: information essential to conducting monitoring if an outbreak occurred**
 - **Release 2: enhancements and web-based data entry (for local public health)**
 - **Release 3: legal order information and additional enhancements**
 - **Further enhancements considered (e.g., complete web-based system; disease specific enhancements for small pox, novel influenza)**

Architecture

- Developed a case-centered (i.e., person being monitored) system
- MS Access front-end was used for user interface
- Perl was used to generate reports
- Perl was used to create a delimited export file for epidemiologic analysis
- Java was used for web-based data entry
- Database was deployed in Oracle

Monitoring Data

- Person information
- Contact information
- Work, school, and daycare information
- Orientation to I/Q Call (Day zero)
- Monitoring calls
- Incoming calls from the person in I/Q or on their behalf
- Symptoms
- Service needs
- Court order information
- Restricted entry information

Reports

- The system generates 9 daily reports
- Internal MDH reports “flag” persons who require follow-up or further evaluation (e.g., non-compliance, new or worsening symptoms)
- Local public health receives reports of:
 - all persons in I/Q in their jurisdiction
 - daily calls needed to be made (if local public health is responsible for monitoring)
- Communication with local public health
 - Initial release - reports communicated via fax/phone
 - Future release - reports communicated via encrypted file

Isolation/Quarantine Monitoring System: Screens

Subject

Microsoft Access - [Isolation/Quarantine (IQ) Form]

File Edit View Insert Format Records Tools Window Help

Records: Search By: Filter By: Menu Print Me!

☐ Open ☒ Subject Name ☐ Id

☐ Assigned to Org ☐ Assigned to Person ☐ County ☒ MDH Contact ☐ Current IQ Status

Select MDH Staff: Remove Filter Switch to Monitoring

*Id: *First Name: *Last Name: *Status: *Disease: IQ Status: (Not set) Current User: Kathy Como-Sabetti (Comosk1)

Subject IQ Location IQ Status Admin Wrk/Sch/DC Contacts Restricted Entry Legal Incoming Calls History

Date of Birth: Age/Units: Primary Language: Country:

Phone 1: Type: Other Phone Comments:

Phone 2: Type:

*County: Out of State County:

Address Line 1:

Address Line 2:

City: State: Zip:

Occupation(s): ☐ Healthcare Related?

Physician Name: Physician Phone Numbers:

Clinic Name: Phone:

City: State: Pager:

Clinic Phone:

Comments: (use Shift F2 to view in a 'zoom' box)

*Required field

Record: 1 of 1 (Filtered)

Form View

Start Novell GroupWise - ... Microsoft Access ... Microsoft PowerPoi... 10:19 AM

Isolation/Quarantine Location

Microsoft Access - [Isolation/Quarantine (IQ) Form]

File Edit View Insert Format Records Tools Window Help

Records: ☐ Open ☐ All Search By: ☐ Subject Name ☐ Id Filter By: ☐ Assigned to Org ☐ Assigned to Person ☐ County ☐ MDH Contact ☐ Current IQ Status Select MDH Staff: Remove Filter Menu Print Me! Switch to Monitoring

*Id: #Deleted *First Name: #Deleted *Last Name: #Deleted *Status: *Disease: IQ Status: (Not set) Current User: Kathy Como-Sabetti (Comosk1)

Subject IQ Location IQ Status Admin Wrk/Sch/DC Contacts Restricted Entry Legal Incoming Calls History

*Location Type: Choose Org: *Effective Date: End Date: Location Name: Address Line 1: Address Line 2: City: State: Zip: Add Hospital Or Nursing Home *County: Verification Status: *Phone 1: Type 1: Phone 2: Type 2: Admission Date: Discharge Date: Attending Physician: Phone: Pager: Comments: Note: that all Locations must be closed (End Date valued) before you can create a new Location record

Record: 1 of 1

*Required field

Record: 1 of 1 (Filtered)

Form View

Start Novell GroupWise - ... Microsoft Access - [... Microsoft PowerPoi... 10:21 AM

Isolation/Quarantine Status

Microsoft Access

File Edit View Insert Format Records Tools Window Help

Isolation/Quarantine (IQ) Form

Records: ☐ Open ☐ All Search By: ☐ Subject Name ☐ Id Filter By: ☐ Assigned to Org ☐ Assigned to Person ☐ County ☐ MDH Contact ☐ Current IQ Status

Select MDH Staff: Remove Filter Menu Print Me! Switch to Monitoring

*Id: #Deleted *First Name: #Deleted *Last Name: #Deleted *Status: *Disease: IQ Status: (Not set) Current User: Kathy Como-Sabetti (Comosk1)

Subject IQ Location **IQ Status** Admin Wrk/Sch/DC Contacts Restricted Entry Legal Incoming Calls History

* *IQ Status: *Start Date: Fever End Date:

*Projected End Date:

Revised End Date: Extension Reason: If Other:

Actual End Date: Reason Closed Early:

Individual Informed By: On Date:

Note: All Statuses must be 'Closed' (Actual End Date valued) before you can create a new Status record

Record:

Monitoring Session Start Dates:

Start Date: Date Entered: Current Day Number:

Record: 1 of 1

Monitoring Level Information:

Level: *Effective Date: Reason Changed: Comments:

*Required field

Record: 1 of 1 (Filtered)

Form View

Start Microsoft PowerPoint Microsoft Access 10:25 AM

Contacts

Microsoft Access

File Edit View Insert Format Records Tools Window Help

Isolation/Quarantine (IQ) Form

Records: ☐ Open ☒ Subject Name ☐ Id
☐ All

Search By: Filter By: ☐ Assigned to Org ☐ Assigned to Person ☐ County ☒ MDH Contact ☐ Current IQ Status
Select MDH Staff: Remove Filter Switch to Monitoring

Menu Print Me

Subject IQ Location IQ Status Admin Wrk/Sch/DC **Contacts** Restricted Entry Legal Incoming Calls History

Search by Contact Name Filter Contacts By... ☐ Caregiver ☐ Emergency Contacts ☒ All Contacts

*First Name: Create New Subject from this Contact
*Last Name:
Address Line 1:
Address Line 2:
City:
State: Zip:
Country: *County:
Phone Number: Language:
Alt Phone:

Contact Type:
Relationship: Other:
Caregiver Type: Emergency Contact:
Date of Birth: Age/Units: Years
Date of Last Contact w/case: Occupation:
Currently in Household? Healthcare Occupation?
In Isolation or Quarantine? Recent H/C Facility Visit?
Contact Symptoms:
*Symptom Date: *Referred to Clinical Team?

Restricted Entry:
Consent Form Info
Org Providing: Add Org
Staff Providing: Add Staff
Date Signed:
Comments:

About Restricted Entry

Record: of 4

*Required field

Record: of 7 (Filtered)

Form View

Start Novell GroupWise -... K:\IDEPC-Projects\... Microsoft Access Microsoft PowerPoi... 11:00 AM

Monitoring Calls

Microsoft Access - [Isolation/Quarantine (IQ) Monitoring Form]

File Edit View Insert Format Records Tools Window Help

Monitoring Pick an Id # 108 Guy, Compliant Current Session Start Dt: 12/01/2003 Close

Lvl: Voluntary I/Q with MDH rr Loc Type: Hospital IQ Stat: Isolation SARS Day #: 163 Switch to Subject

Cycle **Attempt** Service Requests Symptoms Temperature Log Day Zero

Cycle: 12/5/2003 Day # 4 Cycle # 2 Complete: No *Date: 12/05/2003 *Time: 3:30 pm *Staff Person: LPH1, Ali's Ramse

☒ Direct Verification ☐ Work/School/Daycare Verification Show all Attempts

Method of Contact: Phone Call If Other:

Location:
Hospital with no org record Type: IQ Loc - Hospital
3366 Excelsior Blvd
SLP, MN 55416 Contact:

Phone... Verification Status:
☒ 555--555-5552 (Home Land Line) Verified
☐ 555-666-8888 (Home Land Line) Verified
☐ Other:

*Attempt Outcome: Successful

Who was Contacted:
☒ Subject (Compliant Guy)
☐ Caregiver Save Record and Continue

☒ No Services ☐ Services... Services

☐ No Symptoms ☒ Symptoms Symptoms *Temperature: 100.3 *Scale: Fahrenheit
*Route: Ear

Newly Symptomatic Household Contact? No Comments: Said cough is worse

Day Zero Attempt Compliance: Compliant

Record: 1 of 16

*Required field

Form View

Start Novell Group... K:\IDEPC-Proj... Microsoft Pow... Isolation/Quar... Isolation/Qu... 11:02 AM

Day Zero Call

Microsoft Access - [Isolation/Quarantine (IQ) Monitoring Form]

File Edit View Insert Format Records Tools Window Help

Monitoring

Pick an Id # 108

Guy, Compliant

Current Session Start Dt: 12/01/2003

Close

Lvl: Voluntary I/Q with MDH rr

Loc Type: Hospital

IQ Stat: Isolation

SARS

Day #: 163

Switch to Subject

Cycle

Attempt

Service Requests

Symptoms

Temperature Log

Day Zero

Monitoring Date/Time: 12/01/2003 8:00 am For IQ Status 'Isolation' started on 12/01/2003

*Program Explained? Yes

*Individual Response: Individual understands and agrees to IQ

Date Instructions Mailed:

Individual Statement:

Save Record and Continue

Question	Current Answer	Pick an Answer
1. Infection control instructions given?		More Info
2. IQ restrictions explained?		More Info
3. Informed about monitoring purpose?		More Info
4. Monitoring level explained?		More Info
5. Worsening symptoms instructions given (Isolation only)?		More Info
6. Developing symptoms instructions given (not in Isolation)?		More Info
7. Has thermometer?		More Info
8. Primary care giver identified?		More Info
9. Instructions given for requesting services?		More Info
10. Emergency number given?		More Info

Follow-Up Needed:

If Other:

Assigned to:

Date of Follow-Up:

Follow-Up Action Taken:

Comments:

Record: 1 of 1

*Required field

Ready

Start

Novell Group...

K:\IDEPC-Proj...

Microsoft Pow...

Isolation/Quar...

Isolation/Qu...

11:06 AM

Incoming Calls

Microsoft Access

File Edit View Insert Format Records Tools Window Help

Isolation/Quarantine (IQ) Form

Records: ☐ Open ☐ All Search By: ☒ Subject Name ☐ Id Filter By: ☐ Assigned to Org ☐ Assigned to Person ☐ County ☒ MDH Contact ☐ Current IQ Status Select MDH Staff: Buck, Jessica Remove Filter Menu Print Me! Switch to Monitoring

*Id: 33 *First Name: One *Last Name: Aliscase *Status: Open *Disease: SARS IQ Status: Short-Term Isolation Current User: Jessica Buck (Buckj1)

Subject IQ Location IQ Status Admin Wrk/Sch/DC Contacts Restricted Entry Legal Incoming Calls History

*Date Received: 12/08/2003 *Time: 9:45 am *Org Receiving Call: Minnesota Department of Health Staff Receiving Call: Buck, Jessica

*Reason for Call: Symptoms Caller's Phone Nbr: 548-987-6532

Call Received From:

☒ Subject

☐ Contact Name: Relationship:

☐ Other Name: Relationship:

Save Record and Continue

If Services Were Discussed During Call: ☒ No Services ☐ Services Services

If Symptoms Were Discussed During Call: ☐ No Symptoms ☒ Symptoms Symptoms Temperature: 102.5 Scale: Fahrenheit Route: Oral

Comments:

Record: 1 of 1

*Required field

Record: 1 of 7 (Filtered)

Form View

Start Novell GroupWise -... K:\IDEPC-Projects\... Microsoft Access Microsoft PowerPoi... 11:00 AM

Court Order

Microsoft Access - [Isolation/Quarantine (IQ) Form]

File Edit View Insert Format Records Tools Window Help

Records: ☐ Open ☐ All Search By: ☐ Subject Name ☐ Id Filter By: ☐ Assigned to Org ☐ Assigned to Person ☐ County ☐ MDH Contact ☐ Current IQ Status Select MDH Staff: Buck, Jessica Remove Filter Menu Print Me! Switch to Monitoring

108 Compliant Guy Open SARS Isolation Jessica Buck (Buckj1)

Subject IQ Location IQ Status Admin Wrk/Sch/DC Contacts Restricted Entry Legal Incoming Calls History

All Orders

Coverage:	Type:	Title:	Effective Dt:	Orig Proj End Dt:	Curr Proj End Dt:	Actual End Dt:
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Group Order Maintenance Add New Individual Legal Order Group Order Print Me

*Legal Order Type: *Effective Date: Time:
*Title: Commissioner Hold *Orig Projected End Dt: Time:
Filed by Agency: Court Order Current Projected End: Time:
Individual: Federal Administrative Order Actual End Date: Time:
*Issuing Authority: Add Filing Agency Add Issuing Authority
Provisions of Order:
Contest Description:

Notifications

Legal Order Event	Date of Notice	Notification Method
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Update

*Required field

Record: 1 of 1 (Filtered)

Form View

Start Novell Group... K:\IDEPC-Proj... Microsoft Pow... Isolation/Quar... Isolation/Qu... 11:06 AM

Print Me

Print-Me Report Sample.rtf - Microsoft Word

File Edit View Insert Format Tools Table Window Help

89% Normal Arial 12 B I U

1 2 3 4 5 6 7 8 9 10

Detailed Informational Isolation/Quarantine Report: Johnathon Anderson **ID #:** 12345 **Disease:** SARS **Printed:** 05/13/2004 09:08 am

Subject Information **Part A**

<u>Subject Name:</u>	Johnathon Anderson	<u>Status:</u>	Open
<u>Address:</u>	8010 Buster Keaton Way	<u>MDH Contact:</u>	Jessica Buck
	Los Angeles, CA 90045	<u>Responsible Org:</u>	Olmsted County Public Health
		<u>Responsible Staff:</u>	Jessica Buck
<u>County:</u>	Anoka	<u>Primary LPH Org:</u>	
<u>Country:</u>	United States	<u>LPH Contacts:</u>	
<u>Telephone 1:</u>	654-444-3333	<u>Date of Birth:</u>	
<u>Telephone 2:</u>	123-456-7890	<u>Age/Units:</u>	
	Home Land Line	<u>Primary Language:</u>	
	Mobile	<u>Clinic Information:</u>	
<u>Physician Name:</u>			
<u>Telephone:</u>			
<u>Pager:</u>			
<u>Comments:</u>			

History Information **Part B**

<u>Opened Date:</u>		<u>Symptom Resolved:</u>		<u>Resolution Verified:</u>	
<u>Symptom Onset Date:</u>					
<u>IQ End Letter Sent:</u>					
<u>Closed Date:</u>		<u>Closed By:</u>	Diana Malinski		
<u>Reason Closed:</u>					

Organization Information: **Organization Staff Information:** **Part C**

<u>Organization Name:</u>	Minnesota Department of Health	<u>Staff Person:</u>	Jessica Buck	<u>Email Address:</u>	jessica.buck@health.state.mn.us
<u>Type:</u>	MDH				
<u>Address:</u>	717 Delaware St SE				
	Minneapolis, AK 55440-5555				
<u>Telephone:</u>	612-676-4050 888888				
<u>Facsimile:</u>	612-676-5689				

A complete report is made up of Parts A - Q

Page 1

Draw AutoShapes 1/33 At 0.4" Ln 1 Col 1 REC TRK EXT OVR

Start Novell GroupWise -... Print-me Screen Sh... Print-Me Report ... Microsoft PowerPol... 9:48 AM

Web Form

MDH Isolation Quarantine - Netscape 6

File Edit View Search Go Bookmarks Tasks Help

http://mdh-jackal.health.state.mn.us/iq/controller?event=LOGIN&action=LOGIN_APP

Home My Netscape Search Bookmarks

MINNESOTA
MDH
DEPARTMENT OF HEALTH

Isolation Quarantine

You are logged in as **Hung Nguyen** [Log out](#)

System Administrator

Search by ID Number:

Search by Last Name:

All open records on file

Found: 90 open record(s)

Select	ID Number	Name	Date of Birth
Open Services Monitoring Incoming Calls Legal Orders	2323	Amphibian, Richard	
Open Services Monitoring Incoming Calls Legal Orders	2334	A, A	
Open Services Monitoring Incoming Calls Legal Orders	2349	A, A	
Open Services Monitoring Incoming Calls Legal Orders	2354	A2, A2	
Open Services Monitoring Incoming Calls Legal Orders	33	Aliscase, One	12/25/1973
Open Services Monitoring Incoming Calls Legal Orders	2327	Animal, Dead	
Open Services Monitoring Incoming Calls Legal Orders	2335	B, B	
Open Services Monitoring Incoming Calls Legal Orders	2350	B, B	
Open Services Monitoring Incoming Calls Legal Orders	2355	B2, B2	
Open Services Monitoring Incoming Calls Legal Orders	908	Barilla, Guadalupe	
Open Services Monitoring Incoming Calls Legal Orders	909	Benidorm, Guadalupe	
Open Services Monitoring Incoming Calls Legal Orders	910	Borracha, Guadalupe	
Open Services Monitoring Incoming Calls Legal Orders Restricted Entry	2322	Brother, Richard's	
Open Services Monitoring Incoming Calls Legal Orders	911	Burbuja, Guadalupe	
Open Services Monitoring Incoming Calls Legal Orders	913	Bzinask, Guadalupe	
Open Services Monitoring Incoming Calls Legal Orders	914	Bzzneee, Guadalupe	
Open Services Monitoring Incoming Calls Legal Orders	2351	C, C	
Open Services Monitoring Incoming Calls Legal Orders	700	CallsNeeded, IQ Status	01/01/2000
Open Services Monitoring Incoming Calls Legal Orders	2338	Closed, Four	
Open Services Monitoring Incoming Calls Legal Orders	113	Compliant Call, Another Guy	

http://mdh-jackal.health.state.mn.us/iq/controller?event=SWITCH_TAB&tab=sysAdmin

Start Novell GroupWise -... Microsoft PowerPoi... Mail From: Steven... MDH Isolation Q... 8:54 AM

Web Form Monitoring Attempt

MDH Isolation Quarantine - Netscape 6

File Edit View Search Go Bookmarks Tasks Help

http://mdh-jackal.health.state.mn.us/ig/monitorAction1.do?action=MONITOR_HOME&caseID=2323 Go Search

Home My Netscape Search Bookmarks

MINNESOTA MDH
DEPARTMENT OF HEALTH

Isolation Quarantine

You are logged in as **Hung Nguyen** [Log out](#)

ID Number: **2323** Name: **Amphibian, Richard** Date of Birth:

Monitoring Attempt

* Date of attempt: (mm/dd/yyyy)

* Time of attempt: : (hh:mm) (AM or PM)

* Day #: * Cycle #:

* Required Fields

[Home](#) [Open Services](#) [Incoming Calls](#) [Legal Orders](#) [Restricted Entry](#)

Document: Done (0.641 secs)

Start Novell GroupWise - ... Microsoft PowerPol... Mail From: Steven.... MDH Isolation Q... 8:55 AM

Web Form Service Follow-up

MDH Isolation Quarantine - Netscape 6

File Edit View Search Go Bookmarks Tasks Help

http://mdh-jackal.health.state.mn.us/ig/followupAction.do

Home My Netscape Search Bookmarks

MINNESOTA MDH DEPARTMENT OF HEALTH

Isolation Quarantine

You are logged in as **Hung Nguyen** [Log out](#)

ID Number: 33	Name: Aliscase, One	Date of Birth: 12/25/1973
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Service Follow-up

- Original Service Request
 - Date/Time Request: **12/22/2003 08:30 AM**
 - Service Request: **Thermometer**
 - Broke Thermometer
 - Assigned to: **Como-Sabetti, Kathy**
 - Minnesota Department of Health
 - Assigned Date:
 - Comments:
- Enter Follow-up
 - * Date of Follow-up: (mm/dd/yyyy)
 - * Time of Follow-up: : (hh:mm) (AM or PM)
 - Action Taken:
 - * Request Status:
 - * Denied By:
 - * Denied Reason:
 - * Required fields

Document: Done (0.5 secs)

Start Novell GroupWise -... Microsoft PowerPol... Mail From: Steven... MDH Isolation Q... 8:56 AM

Challenges

- **Tight timelines**
- **No practical experience with large-scale isolation or quarantine**
- **System built on assumptions; additional need for flexibility**
- **Varying technical capabilities of local public health agencies**

Challenges (cont.)

- **Funding and staff needs**
 - Impact on regular tasks
- **Staff pulled from multiple IT areas**
- **Lack of staff continuity may make updates difficult**
- **Funding necessary for future changes/enhancements**

Acknowledgements

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